

Pre-surveys and Choosing Survey Methods
P. Brown (revised 9/14/05)

I. What is a Pre-survey?

Prior to conducting an internal or external survey sources of information may be checked to assist in determining the type of survey to perform. A pre-survey does not take the place of an internal or external bat survey, it merely is an information gathering exercise.

1. Local inquiries

Public - residents in the area

Organizations - State and Federal agencies, Abandoned Mine Lands Programs, Search and Rescue, Mining Companies, Caving Grottos, Boy Scouts, others.

Problems - generally does not provide species-specific information; may over or underestimate types of use or numbers

2. Historical inquiries

Mine personnel - information may be anecdotal; **mine maps may be available but may not show most recent workings or collapses**

Agency personnel - information may be too general; **mine maps may be available but may not show most recent workings or collapses**

Problems - generally does not provide species-specific information; may over or underestimate types of use or numbers

3. Mine feature information

Number, dimension, location, description of all entrances (also note airflow, if any, through entrances). **Sometimes internal connections are not apparent by an external examination, and at certain seasons and temperatures no air flow may be apparent in multiple entrance mines.**

Presence of any obstructions (vegetation, old timbers, trash, etc)

Presence of standing water or evidence of prior flooding

Internal mine features that can be safely determined from outside, such as depth, side passages, ventilation shafts, etc

Visual signs of bats (roosting bats, carcasses, guano, or insect parts.)

Other wildlife (owls, tortoises, Say's phoebes, etc.)

The size of the dump outside of a mine can indicate the internal volume. This may underestimate the volume in cases where more high-grade ore was removed or the entrance is located in a drainage and material has been washed away. Also, some air shafts without dumps may be the primary access point to the mine for bats.

General guideline - Adits less than 10 to 20 feet - unlikely habitat, although bats could be hidden in domes or rock crevices.

Shaft less than 25 feet (only if entire shaft is visible and no drifts or connections can be seen) - unlikely habitat

II. Types of Mine Surveys - Choosing a Survey Method

1. External Surveys

- * Requires numerous observations to identify different seasonal use
- * Seasonal constraints (**no bats exit during winter hibernation**) may decrease effectiveness
- * Success (or failure) may be influenced by **wind**, lunar cycle, precipitation, temperature, other external factors
- * No species specific information unless done in conjunction with mist netting, trapping, or possibly Anabat equipment
- * Minimal safety risks to investigators
- * Generally requires some specialized equipment (infra-red lights, night vision equipment, night shot cameras, ultrasonic bat detectors)

2. Internal Surveys

- * Possible life threatening risks to investigators
- * Can be performed anytime to clarify seasonal use
- * Generally allows for species specific identification
- * Requires specialized equipment and expertise (mine lamps, gas detector, safety helmet, etc)

- * Reduces survey time

- * Provides information even if no bats are observed (guano, insect parts, etc)

Only internal winter surveys can be used to detect hibernating bats that do not produce guano and do not exit the mine on a nightly basis.

Sometimes internal surveys will elucidate connections of survey openings so that if an external survey is required, observers can be effectively positioned.